IN THE CLAIMS

*The status of the claims (as presently amended) is as follows:*

1-2. (*Canceled*)

3. (*Currently Amended*) The semiconductor device according to Claim 9, wherein the ~~fourth semiconductor~~buffer layer comprises a plurality of regions.

4-7. (*Canceled*)

8. (*Withdrawn*) The semiconductor device according to Claim 9, wherein the impurity concentration in the portion of the drift layer between the anode layer and the buffer layer is lower than the impurity concentration in the portion of the drift layer between the cathode layer and the buffer layer.

9. (*Currently Amended*) A semiconductor device comprising:

a drift layer of a first conductivity type having a first major surface and a second major surface;

an anode layer of a second conductivity type on the first major surface of the drift layer, the anode layer being doped more heavily than the drift layer;

a cathode layer of the first conductivity type on the second major surface of the drift layer, the cathode layer being doped more heavily than the drift layer; and

a buffer layer of the first conductivity type extending across the drift layer, the buffer layer being spaced apart from the anode layer and the cathode layer, the buffer layer being doped more heavily than the drift layer,

wherein the shortest distance $X_1$ from the pn-junction between the anode layer and the drift layer to the edge of the buffer layer on the side of the anode is expressed by the following relational expression:

$$0.3 \leq X_1/\{(BV\ \varepsilon_s)/q[(J_F/q\ v_{sat}) + N_D]\}^{1/2} \leq 1.6,$$

where BV is the breakdown voltage of the semiconductor device, $\varepsilon_s$ is the dielectric permittivity of the semiconductor, q is the elementary charge quantity, $J_F$ is the rated current density of the semiconductor device, $v_{sat}$ is the carrier saturation velocity, and $N_D$ is the concentration of the impurity of the first conductivity type in the drift layer, and

wherein a depletion layer extends from the pn junction to the cathode layer.

10. (*Currently Amended*) A semiconductor device comprising:

a drift layer of a first conductivity type having a first major surface and a second major surface;

an anode layer of a second conductivity type on the first major surface of the drift layer, the anode layer being doped more heavily than the drift layer;

a cathode layer of the first conductivity type on the second major surface of the drift layer, the cathode layer being doped more heavily than the drift layer; and

a buffer layer of the first conductivity type extending across the drift layer, the buffer layer being spaced apart from the anode layer and the cathode layer, the buffer layer being doped more heavily than the drift layer,

wherein the shortest distance $X_1$ from the pn-junction between the anode layer and the drift layer to the edge of the buffer layer on the side of the anode is expressed by the following relational expression:

$$0.8 \leq X_1/\{(BV\ \varepsilon_s)/q[(J_F/q\ v_{sat}) + N_D]\}^{1/2} \leq 1.2,$$

where BV is the breakdown voltage of the semiconductor device, $\varepsilon_s$ is the dielectric permittivity of the semiconductor, q is the elementary charge quantity, $J_F$ is the rated current density of the semiconductor device, $v_{sat}$ is the carrier saturation velocity, and $N_D$ is the concentration of the impurity of the first conductivity type in the drift layer, and

wherein a depletion layer extends from the pn junction to the cathode layer.

11. (*Currently Amended*) A semiconductor device comprising:

a drift layer of a first conductivity type having a first major surface and a second major surface;

an anode layer of a second conductivity type on the first major surface of the drift layer, the anode layer being doped more heavily than the drift layer;

a cathode layer of the first conductivity type on the second major surface of the drift layer, the cathode layer being doped more heavily than the drift layer; and

a buffer layer of the first conductivity type extending across the drift layer, the buffer layer being spaced apart from the anode layer and the cathode layer, the buffer layer being doped more heavily than the drift layer,

wherein the thickness $Y_1$ of the buffer layer and the average impurity concentration $N_{D2}$ of the buffer layer are related with each other by the following relational expression:

$$Y_1/\{[X_1^2 + 2\varepsilon_s (V_{CC} + V_{PT})/q\, N_{D2}]^{1/2} - X_1\} \leq 2,$$

where $X_1$ is the shortest distance from the pn-junction between the anode layer and the drift layer to the edge of the buffer layer on the side of the anode, $V_{CC}$ is the half value of the breakdown voltage of the semiconductor device, $V_{PT}$ is the voltage, at which the depletion layer contacts the buffer layer of the first conductivity type, $\varepsilon_s$ is the dielectric permittivity of the semiconductor, and q is the elementary charge quantity, and

wherein a depletion layer extends from the pn junction to the cathode layer.

12. (*Currently Amended*) The semiconductor device according to Claim 9, wherein the thickness $Y_1$ of the buffer layer and the average impurity concentration $N_{D2}$ of the buffer layer are related with each other by the following relational expression:

$$Y_1/\{[X_1^2 + 2\varepsilon_s (V_{CC} + V_{PT})/q\, N_{D2}]^{1/2} - X_1\} \leq 2,$$

where $X_1$ is the shortest distance from the pn-junction between the anode layer and the drift layer to the edge of the buffer layer on the side of the anode, $V_{CC}$ is the half value of the breakdown voltage of the semiconductor device, $V_{PT}$ is the voltage, at which the depletion layer contacts the buffer layer of the first conductivity type, $\varepsilon_s$ is the dielectric permittivity of the semiconductor,

and q is the elementary charge quantity.

13. (*Original*) The semiconductor device according to Claim 10, wherein the thickness $Y_1$ of the buffer layer and the average impurity concentration $N_{D2}$ of the buffer layer are related with each other by the following relational expression:

$$Y_1/\{[X_1^2 + 2\varepsilon_s (V_{CC} + V_{PT})/q\, N_{D2}]^{1/2} - X_1\} \leq 2,$$

where $X_1$ is the shortest distance from the pn-junction between the anode layer and the drift layer to the edge of the buffer layer on the side of the anode, $V_{CC}$ is the half value of the breakdown voltage of the semiconductor device, $V_{PT}$ is the voltage, at which the depletion layer contacts the buffer layer of the first conductivity type, $\varepsilon_s$ is the dielectric permittivity of the semiconductor, and q is the elementary charge quantity.

14. (*Withdrawn*) The semiconductor device according to Claim 3, wherein the buffer layer comprises a plurality of selectively formed island-shaped regions.

15. (*Withdrawn*) The semiconductor device according to Claim 3, wherein the buffer layer comprises a plurality of selectively formed stripe-shaped regions.

16. (*Withdrawn*) A semiconductor device comprising:

a bulk wafer comprising a first drift layer of a first conductivity type, the bulk wafer having a first major surface and a second major surface;

a buffer layer of the first conductivity type on the first major surface of the bulk wafer, the buffer layer being doped more heavily than the first drift layer by implanting an impurity of the first conductivity type;

a second drift layer of the first conductivity type epitaxially grown on the buffer layer, the second drift layer being doped more lightly than the buffer layer;

an anode layer formed by implanting an impurity of a second conductivity type into the

second drift layer;

an anode electrode on the anode layer;

a cathode layer on the surface of the bulk wafer exposed by grinding back the bulk wafer for a predetermined depth from the second major surface thereof, the cathode layer being doped more heavily than the first drift layer by implanting an impurity of the first conductivity type; and

a cathode electrode on the cathode layer.

17. (*Canceled*)

18. (*Currently Amended*) The semiconductor device according to Claim 10, wherein the ~~fourth semiconductor~~buffer layer comprises a plurality of regions.

19. (*Currently Amended*) The semiconductor device according to Claim 11, wherein the ~~fourth semiconductor~~buffer layer comprises a plurality of regions.

20. (*Currently Amended*) The semiconductor device according to Claim 12, wherein the ~~fourth semiconductor~~buffer layer comprises a plurality of regions.

21. (*Currently Amended*) The semiconductor device according to Claim 13, wherein the ~~fourth semiconductor~~buffer layer comprises a plurality of regions.

22. (*Withdrawn*) The semiconductor device according to Claim 10, wherein the impurity concentration in the portion of the drift layer between the anode layer and the buffer layer is lower than the impurity concentration in the portion of the drift layer between the cathode layer and the buffer layer.

23. (*Withdrawn*) The semiconductor device according to Claim 11, wherein the impurity concentration in the portion of the drift layer between the anode layer and the buffer layer is

lower than the impurity concentration in the portion of the drift layer between the cathode layer and the buffer layer.

24. (*Withdrawn*) The semiconductor device according to Claim 12, wherein the impurity concentration in the portion of the drift layer between the anode layer and the buffer layer is lower than the impurity concentration in the portion of the drift layer between the cathode layer and the buffer layer.

25. (*Withdrawn*) The semiconductor device according to Claim 13, wherein the impurity concentration in the portion of the drift layer between the anode layer and the buffer layer is lower than the impurity concentration in the portion of the drift layer between the cathode layer and the buffer layer.

26. (*Withdrawn*) The semiconductor device according to Claim 18, wherein the buffer layer comprises a plurality of selectively formed island-shaped regions.

27. (*Withdrawn*) The semiconductor device according to Claim 19, wherein the buffer layer comprises a plurality of selectively formed island-shaped regions.

28. (*Withdrawn*) The semiconductor device according to Claim 20, wherein the buffer layer comprises a plurality of selectively formed island-shaped regions.

29. (*Withdrawn*) The semiconductor device according to Claim 21, wherein the buffer layer comprises a plurality of selectively formed island-shaped regions.

30. (*Withdrawn*) The semiconductor device according to Claim 18, wherein the buffer layer comprises a plurality of selectively formed stripe-shaped regions.

31. (*Withdrawn*) The semiconductor device according to Claim 19, wherein the buffer layer comprises a plurality of selectively formed stripe-shaped regions.

32. (*Withdrawn*) The semiconductor device according to Claim 20, wherein the buffer layer comprises a plurality of selectively formed stripe-shaped regions.

33. (*Withdrawn*) The semiconductor device according to Claim 21, wherein the buffer layer comprises a plurality of selectively formed stripe-shaped regions.